

**AMENDMENTS TO THE CLAIMS**

This is a complete and current listing of the claims, marked with status identifiers in parentheses. The following listing of claims will replace all prior versions and listings of claims in the application.

1. (Currently Amended) An electronic circuit for bidirectional conversion of a high input voltage to a direct-current output voltage with indirect coupling, comprising:

a resonance circuit including a common transformer and a capacitor array,  
~~the a primary converter;~~

a common transformer including a plurality of primary windings and a single secondary winding; ~~and~~

a single secondary converter connected to the single secondary winding; ~~and~~  
~~wherein the a primary converter includes~~ including at least three primary converter sections connected in series, ~~wherein~~ output lines of each of the at least three primary converter sections ~~are being~~ connected to a respective one of the plurality of primary windings of the common transformer, ~~and wherein each primary winding of the common transformer is being~~ allocated one resonance capacitor, the series resonance capacitors forming an oscillating circuit with a leakage inductance coil of the common transformer,

wherein the capacitor array includes a symmetrical magnetic and electric structure for lossless switching operation, and wherein the transformer, the capacitor array, and a respective resonance frequency and switching frequency are selected such that each of the primary converter sections are decoupled, and wherein for a resonance frequency, a ratio of impedances of the leakage inductance coil to the capacitor array is chosen so that an effective value of an alternating voltage of at least one of the capacitors in nominal operation is at least 1/3 of a no-load voltage of a transformer of a primary winding.

2. (Previously Presented) The electronic circuit of claim 1, wherein the at least three primary converter sections each include one input four-quadrant regulator, at least one intermediate circuit capacitor and one half bridge.

3. (Cancelled)

4. (Cancelled)

5. (Currently Amended)      The electronic circuit of claim [[4]] 1, wherein the oscillating circuit has a relatively high efficient decoupling impedance.

6. (Currently Amended)      The electronic circuit of claim [[4]] 1, wherein the at least three primary converter sections each include one input four-quadrant regulator, at least one intermediate circuit capacitor and one half bridge and wherein a resonance frequency of the oscillating circuit is at least equal to a switching frequency, occurring with the at least three primary converter sections and produced by the half bridge.

7. (Previously Presented)      The electronic circuit of claim 1, wherein the high input voltage is one of an alternating-current and a direct-current voltage.

8. (Cancelled)

9. (Currently Amended)      The electronic circuit of claim 8, wherein each respective switching frequency is at least 1.2 times smaller than the resonance frequency.

10. (Cancelled)

11. (Currently Amended)      An electronic circuit for bidirectional conversion of a high input voltage to a direct-current output voltage with indirect coupling, comprising:

a resonance circuit including a common transformer and a capacitor array, the common transformer including a plurality of primary windings and a single secondary winding;

a single secondary converter connected to the single secondary winding; and

a primary converter including at least three primary converter sections connected in series, output lines of each of the at least three primary converter sections being connected to a respective one of the plurality of primary windings of the common transformer, each primary winding of the common transformer being allocated one resonance capacitor, the series resonance capacitors forming an oscillating circuit with a leakage inductance coil of the common transformer,  
wherein the capacitor array includes a symmetrical magnetic and electric structure for lossless switching operation, wherein the transformer, the capacitor array, and a respective resonance frequency and switching frequency are selected such that each of the primary converter sections are decoupled, and ~~The electronic circuit according to claim 8,~~ wherein mutual coupling of the transformer primary windings and respective coupling to the single secondary winding is a symmetrical magnetic coupling achieved in that the respective transformer primary windings have the same magnetic design and are arranged in the shape of discs between two of a plurality of secondary part windings of the single secondary winding that are connected in parallel or in series and that are linked to a secondary converter system, provided with a direct-current output voltage intermediate circuit.

12. (Currently Amended)     The electronic circuit of claim 8~~1~~, wherein control of the electronic circuit is devised in such a manner that residual asymmetries of the resonance circuit are compensated by a control which is performed by way of a mains four-quadrant regulator.

13. (Currently Amended)     An electronic circuit for bidirectional conversion of a high input voltage to a direct-current output voltage with indirect coupling, comprising:

a resonance circuit including a common transformer and a capacitor array, the common transformer including a plurality of primary windings and a single secondary winding;

a single secondary converter connected to the single secondary winding; and

a primary converter including at least three primary converter sections connected in series, output lines of each of the at least three primary converter sections being connected to a respective one of the plurality of primary windings of

the common transformer, each primary winding of the common transformer being allocated one resonance capacitor, the series resonance capacitors forming an oscillating circuit with a leakage inductance coil of the common transformer,  
wherein the capacitor array includes a symmetrical magnetic and electric structure for lossless switching operation, wherein the transformer, the capacitor array, and a respective resonance frequency and switching frequency are selected such that each of the primary converter sections are decoupled, wherein control of the electronic circuit is devised in such a manner that residual asymmetries of the resonance circuit are compensated by a control which is performed by way of a mains four-quadrant regulator, and ~~———— The electronic circuit of claim 12,~~ wherein a superimposed intermediate circuit voltage control is realized by the four-quadrant regulator of the respective one of the primary converter sections, the intermediate circuit voltage control compensating a static residual asymmetry of the resonance circuit so that the intermediate circuit voltages of the primary converter sections can differ.

14. (Previously Presented) The electronic circuit according to claim 1, wherein the primary converter and the secondary converter are operatable in synchronism and in a resonant mode of operation, wherein, in a feed mode of operation, only switches of any half bridges are clocked, whereas in a recuperation mode of operation, only switches of the secondary converter are clocked.

15. (Previously Presented) The electronic circuit according to claim 1, wherein the at least three primary converter sections each include one input four-quadrant regulator, at least one intermediate circuit capacitor and one full bridge.

16. (Previously Presented) The electronic circuit according to claim 12, wherein the electronic circuit is operatable in such a manner that, in case of failure in one of the primary converter sections, the failed converter section is set out of operation and the remaining primary converter sections take over operation of the circuit.

17. (Previously Presented) The electronic circuit according to claim 1, wherein the circuit is designed in such a manner that the at least three primary converter sections are operated directly from an AC mains through a switch and an input filter.

18. (Cancelled)

19. (Previously Presented) The electronic circuit of claim 1, wherein in order to achieve a uniform resonance circuit impedance, one additional inductance coil is provided in series with each transformer primary winding.

20. (Previously Presented) The electronic circuit of claim 17, wherein the input filter is designed as a choke.

21. (Previously Presented) The electronic circuit of claim 1, wherein the electronic circuit is for use in a power supply system for rail vehicles.

22. (Currently Amended) The electronic circuit of claim ~~8~~1, wherein each respective switching frequency is at least 1.4 times smaller than the resonance frequency.

23. (Currently Amended) The electronic circuit of claim ~~10~~1, wherein for a resonance frequency, a ratio of impedances of the leakage inductance coil to the capacitor array is chosen so that an effective value of an alternating voltage of the resonance capacitor in nominal operation is 1/2 of a no-load voltage of a transformer of a primary winding.